

RHIC Plan Of The Day

rhic-au 2007 - Tue Mar 20 2007 0:43:53

02:58 Acceleration Ramp Started, Ramp ID: Au70_1174373689 -tape

First input dropped was 8b-ps1 (03:01:36 3721318)

First upstream carrier drop was 4b-time.A (03:01:36 3721312) -Sequencer

03:01 Beam Abort, 10a-ps3.B dropped { Yellow Abort Kicker} -Sequencer

03:03 Performing analysis for - QDS.1174374099

Tue Mar 20 03:01:39 2007

Yellow Quench Link Interlock

First link to drop was the permit link - input permit.11a-ps1.

The permit link tripped at Tue Mar 20,2007 03:01:39.629586.

The yellow link tripped at Tue Mar 20,2007 03:01:39.721318.

The permit link tripped 0.091732 secs before the yellow link.

For further information about the Permit Link (Beam Permit) and the Yellow Link (Quench Link) and the start of Time = 0 the trip points, see page 7

Analyzing building 8 - due to problem in permit.8b-ps1.

Quench detector brought down the link.

Possible problems - Check if

1. A power supply in this building was oscillating
2. beam induced quench. Check qdRealquench pet page, delayed 5 minutes please wait 5 minutes for real magnet quenches to be displayed in elog.
3. quench detector problem, such as it being reset
4. Any snake magnets quench before this?

If none of these seem to be the cause, consult an expert.

Analyzing qdAlarms page.

qdprocess.8b-qd2 - Yellow Quenched [Y8QFQ3_VT Int 1] 03/20/2007 03:01:40 Tq:-24 [rhicMode: AUAU1] -Sequencer

5-Minute Delay:

03:06 Performing analysis for - QDLD.1174374099

Tue Mar 20 03:01:39 2007

Yellow Quench Link Interlock - Delayed analysis results.

Real magnet quench is Y8QFQ3_VT |

09:53, There was no indication of a power supply fault that caused this quench event. The 8b-qd2 Quench Detector tripped due to a Real Magnet Quench at Y8QFQ3_VT (Yellow Sector 8 Triplet, Quad Focus Magnet q3). The Yellow Permit link tripped 0.091732 seconds before the yellow link. There were significant beam losses recorded in Sector 8; $y8\text{-}lm3.1 = 4580.569$, $y8\text{-}lm2.1 = 4612.609$. This is the 3rd Beam Induced Quench for Run 7. -Gregory P. Heppner [rhic] [quench]

10:58, Upon further investigation with the Yellow Abort Kicker Experts, there was no trigger pulse and Yellow Abort Kicker #5 appeared to Pre-fire. This caused the beam to extend beyond the Sector 9 Dump and into sector 8. Thanks everyone! -Gregory P. Heppner [rhic] [quench]

Abort Kicker Pre-Fires, causing a Real Magnet Quench, RHIC RUN 7

LogView File Setup Logger Options Help

▼ RHIC

- Analysis
- ▶ Artus
- ▶ BCMorDCCT
- BLM
- ▶ BPM
- ButtonBpm
- Chromaticity
- ▶ Coherence
- Collimators
- ▶ Cryo
- Dump**
- ▶ ElectronDetectors
- ▶ Experiments
- GapClean
- ▶ Injection
- ▶ Instrumentation
- ▶ IPM
- ▶ PLL
- ▶ Polarimeter

◆ Show Logging Request Files

◆ Show LogView Display Setups

10aBluScope.logreq
10aBluScope2.logreq
10aYelScope.logreq
10aYelScope2.logreq
BYPsRb.logreq
VoltageMonitor.logreq
VoltageMonitor2.logreq
blu2Scope.logreq
bluScope.logreq
bluVRefRb.logreq
ybRefWFG.logreq
yel2Scope.logreq
yelScope.logreq
yelVRefRb.logreq

Data to Display

Ch1[*]
Ch2[*]
Ch3[*]
Ch4[*]

Scope #1
Channel 1 = Controls Trigger
Channel 2 = Kicker Module #1
Channel 3 = Kicker Module #2
Channel 4 = Kicker Module #3

Filter:

Run: run_fy07

Fill	Start	Stop
8341	Tue Mar 20 02:51:11 2007	Tue Mar 20 05:13:58 2007
8340	Tue Mar 20 01:32:35 2007	Tue Mar 20 02:51:11 2007

Load Data From

Array Plotting Method
2D Time StripChart

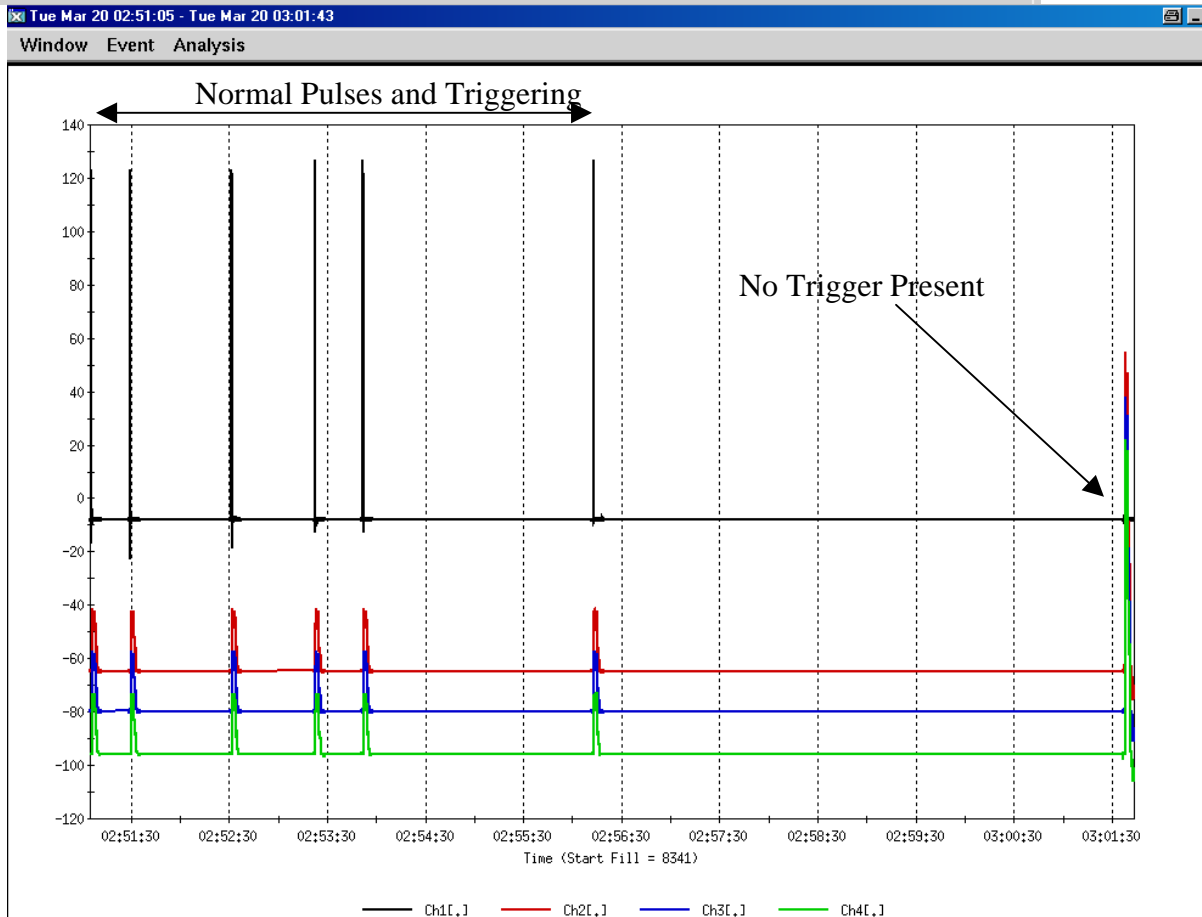
Window
◆ New
◆ Select

Plot
◆ New
◆ Select

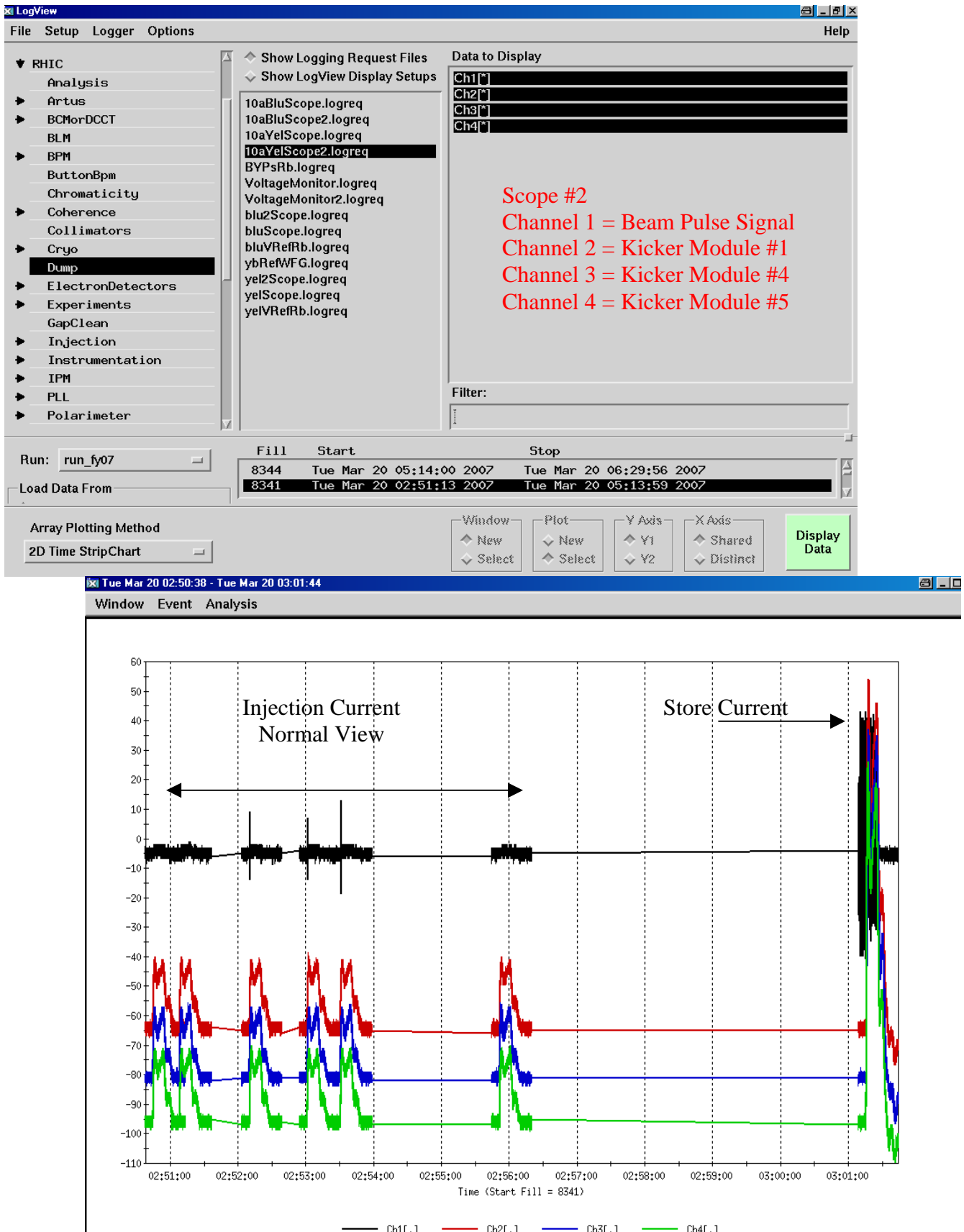
Y Axis
◆ Y1
◆ Y2

X Axis
◆ Shared
◆ Distinct

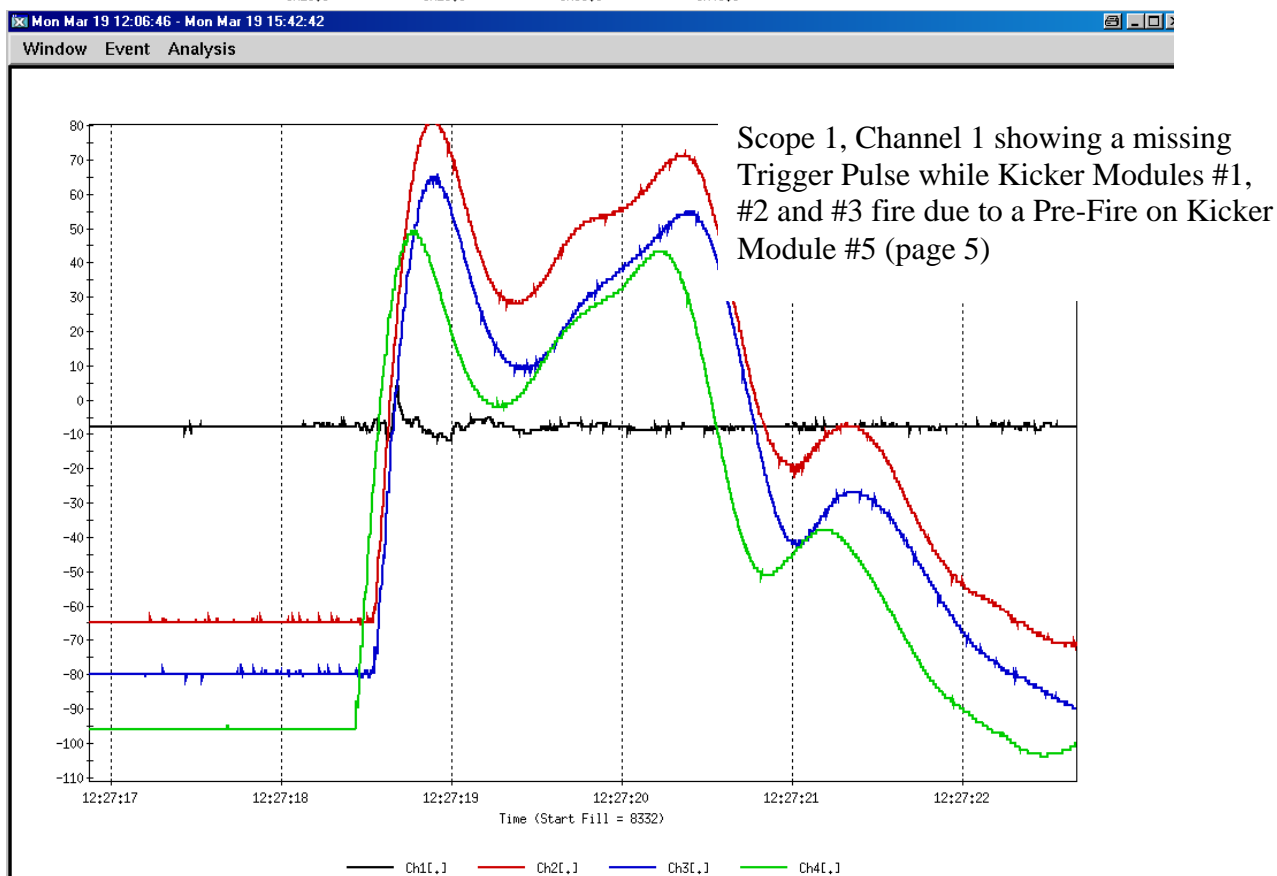
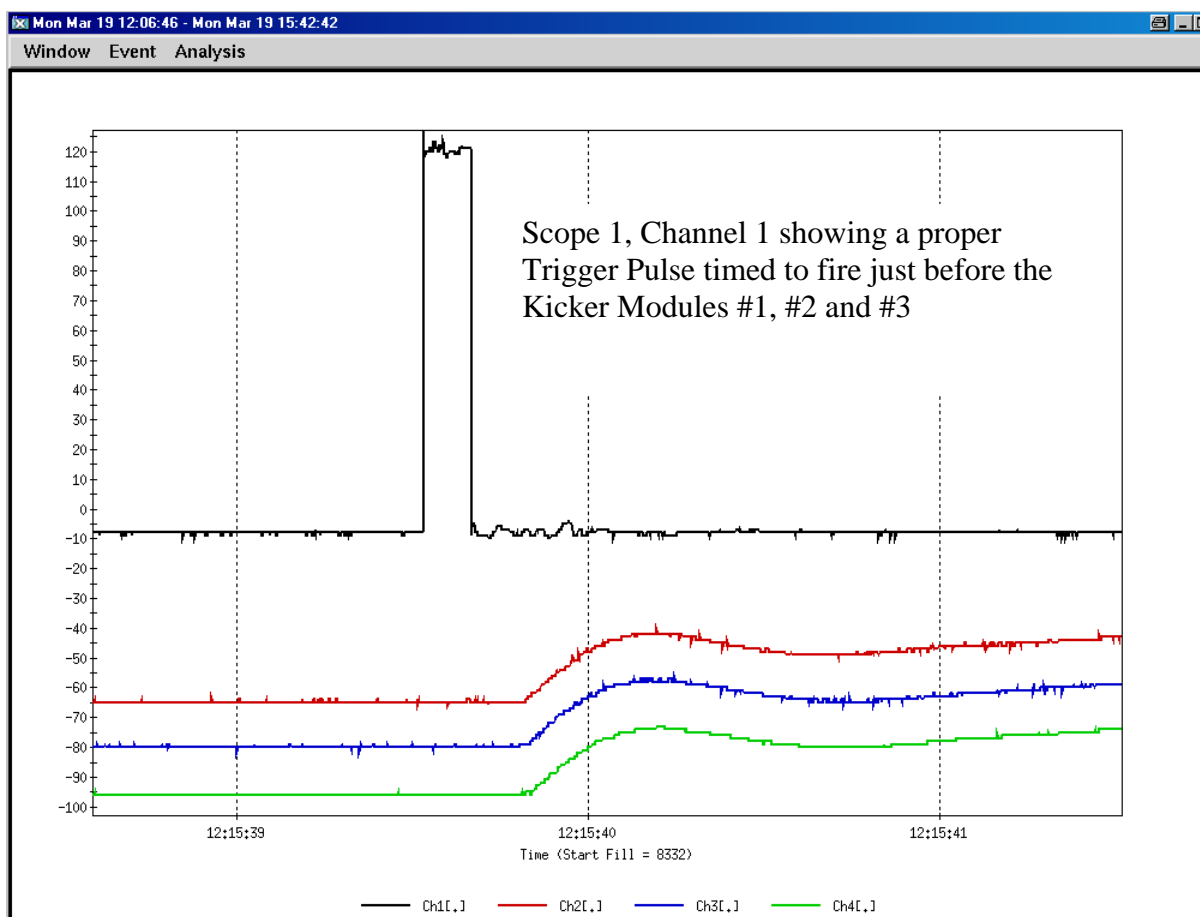
Display Data



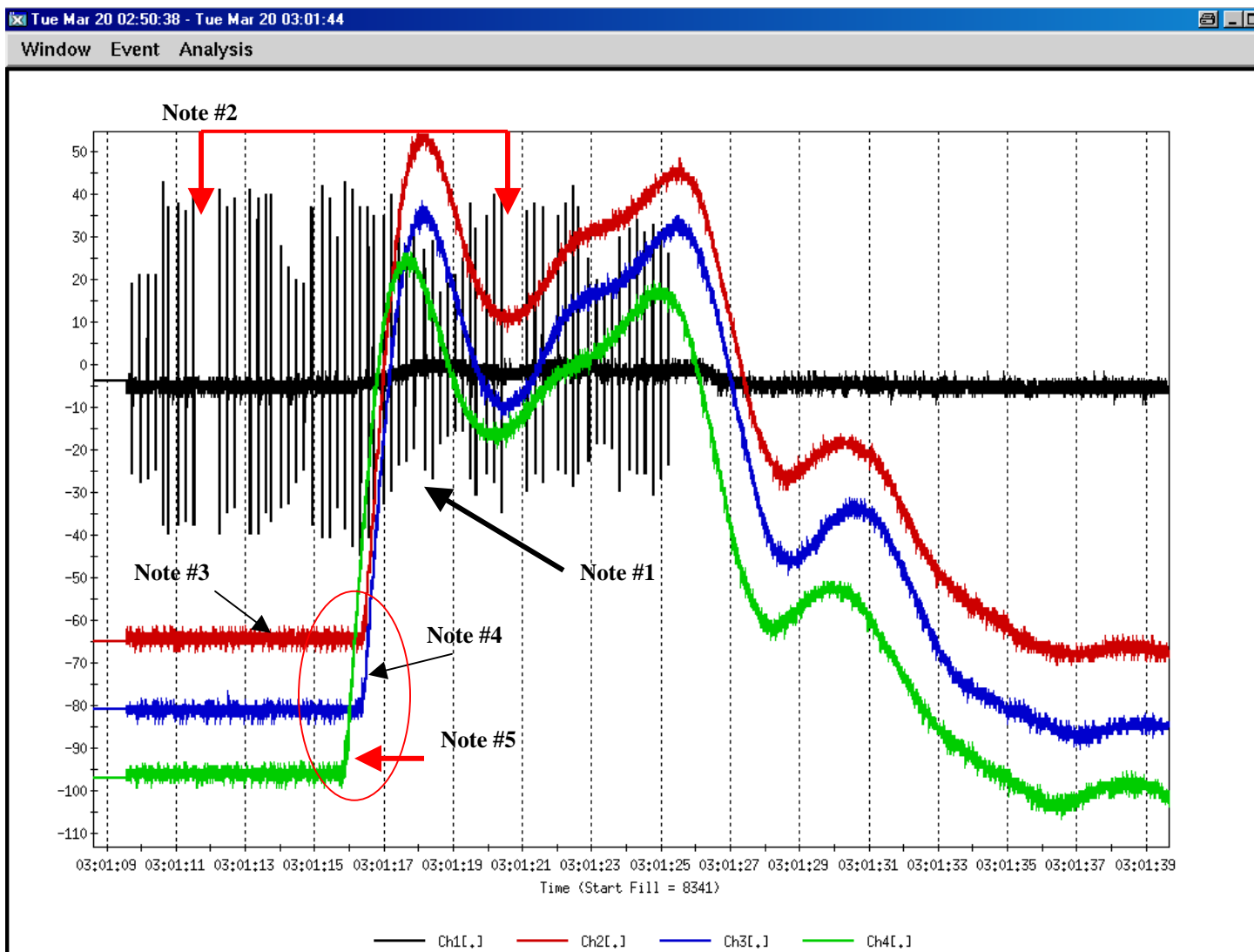
Abort Kicker Pre-Fires, causing a Real Magnet Quench, RHIC RUN 7



Abort Kicker Pre-Fires, causing a Real Magnet Quench, RHIC RUN 7



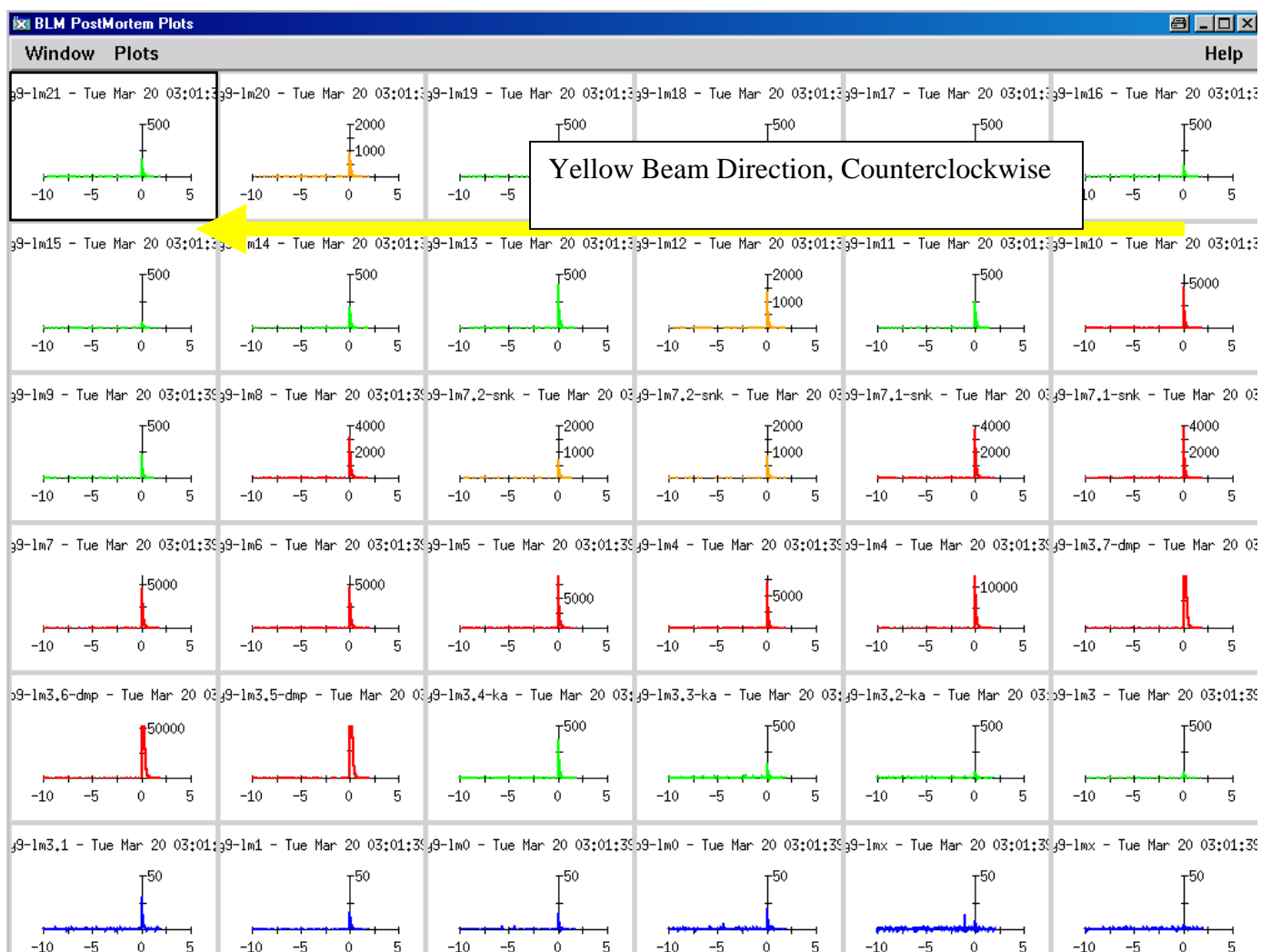
Abort Kicker Pre-Fires, causing a Real Magnet Quench, RHIC RUN 7



Notes:

- 1) Channel 1 = Beam Bunches
- 2) Beam Bunch Abort Gap (This is where the correct triggering of abort should occur to avoid Beam Spray)
- 3) Channel 2 = Kicker Module #1
- 4) Channel 3 = Kicker Module #4
- 5) Channel 4 = Kicker Module #5 (Notice this signal is before Kicker Modules 1 thru 4) Not aligned with the other Kickers, this Module Pre-fired. Possibly due to a High Voltage Spark. There is a circuit that will prevent only one Kicker from firing so the others fired right after Kicker Module #5. This causes the Beam to go beyond the normal Dump in Sector 9 and down into Sectors 8 and 7.

Abort Kicker Pre-Fires, causing a Real Magnet Quench, RHIC RUN 7

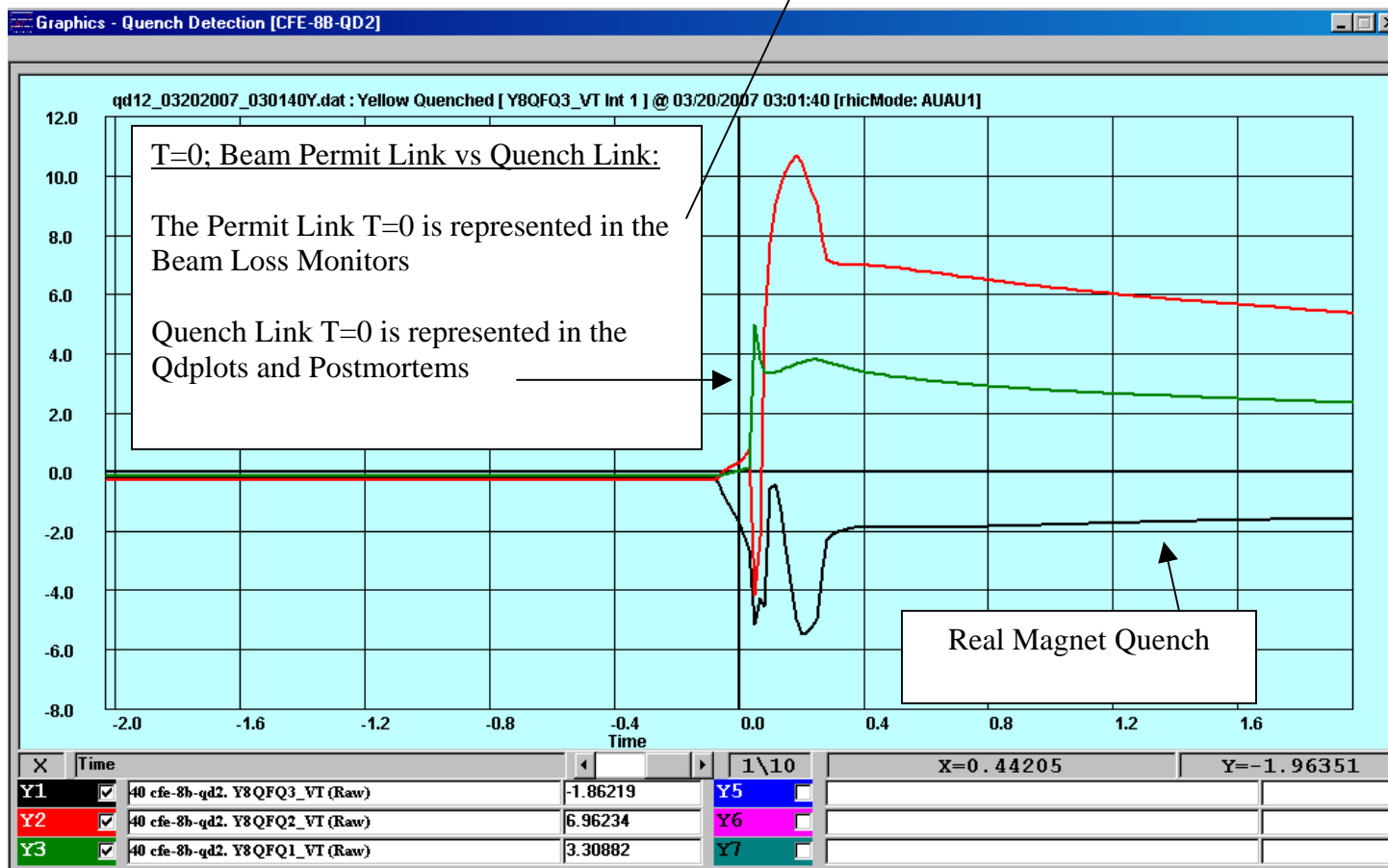
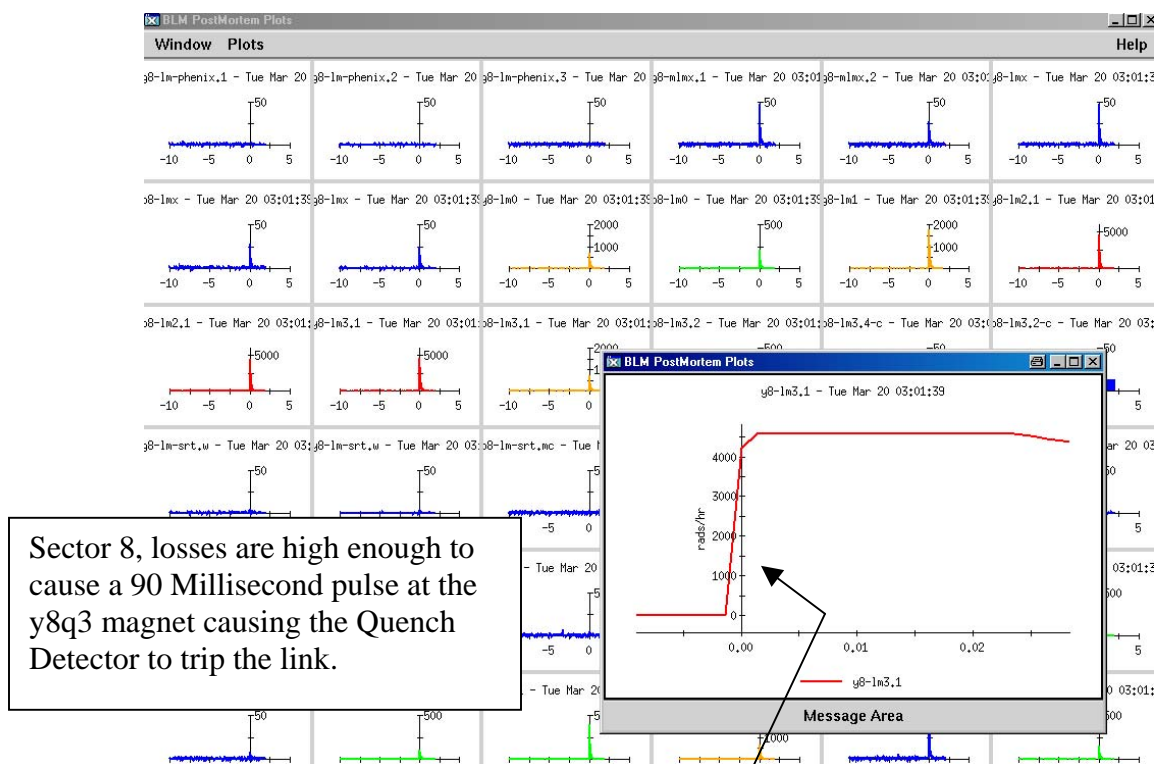


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Beam Losses go beyond the usual Loss Monitor 4 and 5 in the direction of Sector 8

Abort Kicker Pre-Fires, causing a Real Magnet Quench, RHIC RUN 7



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The automatic qli program says that The permit link tripped 0.091732 secs before the yellow link. If you look at the beam loss monitor plots this means that after the permit got pulled (T=0 on blm plot) that for 0.091732 secs magnet Q3 in sector 8 was seeing 4500 rads/Hr of radiation until the yellow quench link was finally pulled.

